

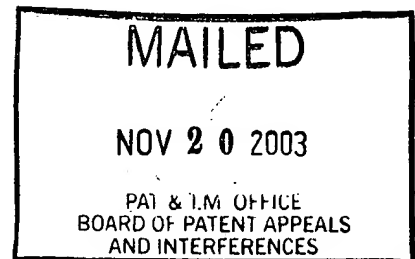
The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte SOL AISENBERG,  
GEORGE FREEDMAN,  
A. ZE'EV HED,  
and  
RICHARD PAVELLE



Appeal No. 2003-1506  
Application No. 09/679,096

ON BRIEF

Before PAK, TIMM, and DELMENDO, Administrative Patent Judges.  
DELMENDO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 (2002) from the examiner's rejection of claims 36 through 40 in the above-identified application.<sup>1</sup> Claims 41 through 43, which

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<sup>1</sup> Although the claims have not been finally rejected, we have jurisdiction under 35 U.S.C. § 134 because the claims have been twice rejected. 37 CFR § 1.191(a) (2001); Ex parte Lemoine, 46 USPQ2d 1420, 1423 (Bd. Pat. App. & Int. 1994) ("[S]o

are the only other pending claims, have been allowed.

(Examiner's answer mailed Feb. 21, 2003 (misdated as Feb. 21, 2002), paper 20, page 3; Office action mailed Oct. 21, 2002, paper 18, page 5.)

The subject matter on appeal relates to an apparatus for drying hands. Further details of this appealed subject matter are recited in representative claims 36 through 38 reproduced below:

36. An apparatus for drying hands, comprising:  
a blower for generating an air jet, where the blower is driven by an electric motor, and  
a heater for increasing temperature of said air jet, and  
an air outlet for outputting said air jet, where said air jet flow is no less than 18,000 linear feet per minute.

37. An apparatus for drying hands, comprising:  
a blower for generating an air jet, where the blower is driven by an electric motor, and  
a heater for increasing temperature of said air jet, and  
an air outlet having a longitudinal axis, the air outlet outputting said air jet, and  
where said air outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and  
where said air outlet has a cross sectional dimension between 0.5 inches to 1.25 inches, and  
where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension.

38. An apparatus for drying hands, comprising:

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long as the applicant has twice been denied a patent, an appeal may be filed.").

a blower for generating an air jet, where the blower is driven by an electric motor, and  
a heater for increasing the temperature of said air jet, and  
an air outlet having a longitudinal axis, the air outlet outputting said air jet, and  
where said air outlet is tubular with an open end for said air jet to exit along the longitudinal axis, and  
where said air outlet has a cross sectional dimension between 0.5 inches to 1.25 inches, and  
where said air outlet has a length 3 to 5 times as large as said air outlet cross sectional dimension, and  
where said air jet flow is no less than 18,000 linear feet per minute, and  
where said air jet at said air outlet has a pressure force of about 25 inches of water pressure height at said outlet, and  
where said air jet is heated, and is at a temperature of approximately 130 deg. F at 4 inches from said air outlet.

The examiner relies on the following prior art references as evidence of unpatentability:

Tomaro	4,327,278	Apr. 27, 1982
Gilbertson	4,634,839	Jan. 6, 1987
Nosenchuck	5,841,943	Nov. 24, 1998 (filed Apr. 25, 1997)

Claims 36 through 40 on appeal stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combined teachings of Gilbertson, Tomaro, and Nosenchuck. (Answer, pages 3-14; Oct. 21, 2002 Office action, pages 2-4.)

We affirm.<sup>2</sup>

As pointed out by the examiner (Oct. 21, 2002 Office action, page 2), Gilbertson describes a filtered warm air drying device 10 including a conventional forced air drying unit 12 (e.g., a hair dryer), which in turn includes, inter alia, a plurality of rotatable fan blades 20 (i.e., a blower for generating an air jet), an electric motor 22 to impart rotation to the blades 20, a heating element 24 for warming the air drawn into device 10 prior to projection therefrom (i.e., a heater for increasing the temperature of the air jet), and an air outlet 34. (Column 1, line 60 to column 2, line 43; Figures 1-7.) Gilbertson further teaches that the filtered warm air drying device "is useful in many environments wherein specific small areas of physical objects and of the human body are to be dried" (e.g., teeth and gums). (Column 2, lines 44-49.)

Thus, the examiner correctly found that Gilbertson differs structurally from the subject matter of appealed claim 36 in only one respect. (Oct. 21, 2002 Office action, page 2.) Specifically, Gilbertson does not describe an air jet flow of

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<sup>2</sup> The appellants submit that the appealed claims should be grouped as follows: (I) claim 36; (II) claim 37; and (III) claims 38-40. (Appeal brief, p. 3.) We therefore select claim 38 from group III and confine our discussion to claims 36-38. 37 CFR § 1.192(c)(7)(1995).

"no less than 18,000 linear feet per minute" as recited in appealed claim 36.

Tomaro describes a multiple speed hair dryer "having a housing with a plurality of heater elements mounted therein and a fan driven by a motor for blowing air over the heating elements and delivering hot air from the housing." (Column 1, lines 47-52; Figure 1.)

In a similar fashion, Nosenchuck discloses a hair dryer comprising, inter alia, a first axial flow impeller, a second axial flow impeller, a driving means for supplying motive force to the first and second axial flow impellers, heating means, and an air outlet. (Column 2, lines 43-56; Figure 2.)

Significantly, Nosenchuck further teaches that the "hair dryer can be tailored to maximize mass flow of the dryer's air throughput while minimizing the speed of revolution of its rotating parts" and that "[t]he mathematical techniques for providing the desired flow characteristics of a hair dryer with the configuration shown are well known to those skilled in the art." (Column 7, line 34 to column 8, line 34.) In particular, Nosenchuck teaches that the heat output of the dryer directly depends on, inter alia, the mass flow rate and the air outlet temperature. (Column 7, line 64 to column 8, line 8.)

Regarding mass flow rate, Nosenchuck states:

The air flow envelope of the ducts is also chosen according to known engineering design principles. The exit velocity of the air flow is an important parameter in that regard. Those skilled in the art will recognize that there are certain practical limits that consumers place on exit velocity magnitudes, as well as there being engineering reasons to have an exit velocity of a certain minimum value.

However, once the total mass flow through the hair dryer is determined, the required dimensions of the ducts can be determined knowing the desired exit velocity. In the embodiment depicted herein, the main housing 30 has a cylindrical inlet portion that extends to the downstream end of the first fan stage 100. Then, the flow envelope is a cubic function, that is,  $d=f(x^{1/3})$ , where  $d$  is the diameter of the main housing and  $x$  is the axial distance along the housing. The outer duct 24 is also configured as a cubic function of the axial distance along the duct. This profile is chosen empirically to inhibit flow separation from the internal duct walls.

Thus, Nosenchuck would have disclosed or suggested to one of ordinary skill in the art that the air velocity of the dryer, which controls the dimensions of the air ducts as well as the outlet air pressure, and the air outlet temperature are both result-effective variables.

While the appellants are correct in noting (appeal brief, page 4) that none of the applied prior art references expressly discloses the recited limitation of "said air jet flow is no less than 18,000 linear feet per minute," we uphold the examiner's determination that "choosing the optimum dimensions for the outlet, air jet pressure, and air jet temperature to

achieve a desired convective heating effect is well within the level of one of ordinary skill in the art" (answer, page 8) because Nosenchuck discloses that these parameters are result-effective variables. That is, given the collective teachings in the prior art, it is our judgment that one of ordinary skill in the art would have found it prima facie obvious to discover (through nothing more than routine experimentation) the optimum air velocity, optimum air outlet pressure and temperature, and optimum air duct dimensions of Gilbertson's air drying device for a given human body area drying application (e.g., hand drying), thus arriving at a device encompassed by the appealed claims. In re Boesch, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980) ("[D]iscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.").

It is well settled that once a prima facie case of obviousness is established, the burden of going forward shifts to the applicants. In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); In re Mayne, 104 F.3d 1339, 1343, 41 USPQ2d 1451, 1455 (Fed. Cir. 1997).

The appellants argue that the examiner's reliance on "routine experimentation" is misplaced because none of the applied prior art references discloses the function of "rapid

drying of the hands by blowing off loose water and disrupting a stagnation boundary layer [on the hands]." (Appeal brief, page 4.) We find this argument unpersuasive. The ultimate objective in both the present invention and the prior art is to provide an air drying device that dries areas of a human body in an effective manner. Because the ultimate objective is common to both the prior art and the claimed invention, it is not inventive to discover the optimum air jet velocity, optimum air jet pressure and temperature, and optimum air outlet dimensions to achieve such effective drying. Moreover, the "stagnation boundary layer" problem is acknowledged in the specification to be known in the prior art. (Specification, page 2, line 13 to page 3, line 9.) While the appellants allege that "a conventional 'blow-off' hand dryer," which is designed to diffuse the stagnation boundary layer, is problematic in that "the hands feel cold and slightly moist...due to evaporation of some of the residual moisture that has not been blown off" (id. at page 3, lines 10-12), we cannot agree with the appellants that the discovery of optimum values of result-effective variables to achieve complete (as opposed to partial) drying requires a conclusion of nonobviousness. In this regard, we point out that while complete drying may be desirable, this result must be balanced against other factors such as energy



cost. The appellants have not identified any objective evidence to establish that the appellants have discovered a device that surprisingly achieves complete drying without sacrificing any other factor.

The appellants urge that the declaration pursuant to 37 CFR § 1.132 (2000) of Denis Gagnon (president of the assignee company) filed Aug. 30, 2002 (attachment to paper 17) establishes that the hand drying industry has experienced a long-felt need for a dryer that rapidly dries the hands. (Appeal brief, page 5.) Specifically, the Gagnon declaration states:

3. I have been aware of a long felt need in the dryer industry for a hand dryer that provides rapid drying. As disclosed in the specification of the '096 application, the hand dryer defined in [the] pending claims [] provides rapid drying.
4. Submitted herewith is documentary evidence supporting my knowledge of a long felt need in the dryer industry for a hand dryer that provides rapid drying as defined in [the] pending claims...
5. Attached as Exhibit 1 is a copy of an article from the Wall Street Journal acknowledging that existing hand dryers are slow and ineffective, requiring 45 seconds to dry the hands. The article notes that most people don't wait that long leaving hands cold, clammy and still wet.
6. Attached as Exhibit 2 is a copy of an article from Maintenance Supplies Magazine acknowledging that existing hand dryers requiring 30-45 seconds to dry the hands exceed user's patience.

7. Attached as Exhibit 3 is a copy of an article from Environmental Building News acknowledging that existing hand dryers take too long to dry hands.

The proffered declaration evidence is unpersuasive. To overcome the examiner's prima facie case of obviousness based on a long-felt need and failure of others, the appellants must provide sufficient "tangible evidence to support a contention that their invention actually has provided a long-awaited, widely-accepted, and promptly-adopted solution to the problem extant in the art, or that others [] had tried but failed to solve that problem." In re Mixon, 470 F.2d 1374, 1377, 176 USPQ 296; 299 (CCPA 1973).

Here, the appellants have identified little, if any, "tangible evidence to support a contention that their invention actually has provided a long-awaited, widely-accepted, and promptly-adopted solution to the problem extant in the art, or that others [] had tried but failed to solve that problem." (Id.) Moreover, the relied upon Wall Street Journal article suggests that the so-called long-felt need has already been fulfilled by a different patented product that "costs about 25% higher than [the assignee's] priciest model." In addition, this article states that "[t]he question of speed [in hand drying] matters little to some clean freaks." Likewise,

Maintenance Supplies, which explains that "nine out of ten people opt for paper towels when given a choice in a public rest room," indicates the existence of another patented device to solve the so-called "long-felt" need. Further, the author of the Environmental Building News noted that a product called "XLerator," which appears to be based on the same technology as described in the present specification, may generate too much noise. On this record, it cannot be said that the invention as recited in the appealed claims has been a "long-awaited, widely-accepted, and promptly-adopted solution to the problem extant in the art."

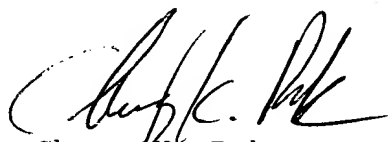
Having determined that the appellants have failed to rebut the examiner's prima facie case of obviousness, we affirm the examiner's rejection under 35 U.S.C. § 103(a) of appealed claims 36 through 40 as unpatentable over the combined teachings of Gilbertson, Tomaro, and Nosenchuck.

The decision of the examiner is affirmed.

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No time period for taking any subsequent action in  
connection with this appeal may be extended under 37 CFR  
§ 1.136(a).

AFFIRMED



Chung K. Pak  
Administrative Patent Judge



Romulo H. Delmendo  
Administrative Patent Judge

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TIMM, Administrative Patent Judge, concurring

I concur in the result reached by my colleagues. I, however, wish to add the following:

Focusing first on claim 36, Appellants argue that none of the prior art references teach that the "air jet flow is no less than 18,000 linear feet per minute" (Brief, p.3) and that there is no motivation to utilize such an air jet flow in Gilbertson (Brief, p. 5). These arguments ignore a critical aspect of the claim: the fact that the claims are directed to an apparatus.

"[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb, Inc., 909 F.2d 1464, 1468, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

Therefore, the patentability of an apparatus claim depends on the claimed structure, not on the use or purpose of that structure, Catalina Marketing Int'l Inc. v. Coolsavings.com Inc., 289 F.3d 801, 809, 62 USPQ2d 1781, 1785 (Fed. Cir. 2002), nor on the function or result of that structure. In re Danly, 263 F.2d 844, 848, 120 USPQ 528, 531 (CCPA 1959); In re Gardiner, 171 F.2d 313, 315-16, 80 USPQ 99, 101 (CCPA 1948).

Nor does the patentability of an apparatus depend on the material worked upon. See In re Rishoi, 197 F.2d 342, 345, 94

USPQ 71, 73 (CCPA 1952; In re Young, 75 F.2d 996, 998, 25 USPQ 69, 71 (CCPA 1935)).<sup>3</sup>

The rate of air flow is not, in itself, a structural limitation, it is a result of dryer operation. This limitation is to be considered only to the extent it distinguishes the claimed structure from the structures suggested by the prior art.

Appellants do not argue that there is a structural difference rising out of the airflow limitation, their argument is merely that the airflow rate, itself, is not taught or suggested. Appellants simply have not pointed to a difference between their claimed structure and that suggested by the prior art.

On the other hand, the Examiner provides evidence that the claimed structure is taught or suggested by the prior art.

As pointed out by the Examiner (Answer, p. 4), Appellants indicate that in order to achieve the claimed airflow rate of no less than 18,000 linear feet per minute (lfm), a motor capable of rotating fan blades at greater than 15,000 rpm should be used

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<sup>3</sup> My concurring colleague believes that I am citing these cases for the proposition that functional limitations are to be given no patentable weight, that is not the case. I agree that functional limitations cannot be ignored, they must be considered. But the relevant question is: how does the functional limitation further limit the structure of the apparatus?

(specification, p. 17, ll. 10-13). No other direct guidance is furnished in the specification and the Examiner interprets the Appellants' disclosure as indicating that the 15,000 rpm rotation rate is a key factor in achieving the 18,000 lfm airflow rate. The Examiner acknowledges that motor rotation rate is not the only parameter involved that affects airflow. But the Examiner finds it is a substantial factor in achieving a desired flow rate (Oct. 21, 2002 Office Action, p. 3). Appellants do not dispute these findings (Brief, pp. 3-5).

Each of the references relied upon by the Examiner describes an apparatus including a blower, motor, heater, and outlet, the structures directly recited in claim 36. In Gilbertson, the drying device is a tapered nozzle on a conventional hair dryer. Gilbertson is silent with respect to motor speed, but Tomaro describes a hair dryer including a motor capable of rotating a fan at 19,000 rpm. Tomaro is, thus, evidence that such motors were conventionally used in hair dryers of the sort described in Gilbertson. With respect to a reason, suggestion or motivation for the combination, Gilbertson suggests using the nozzle on conventional hair dryers and Tomaro describes a conventional hair dryer. The references provide a road map for the combination. See In re Sastry, 285 F.3d 1378, 1381-82, 62 USPQ2d 1436, 1439 (Fed. Cir. 2002).

Appellants argue there is no motivation to utilize an air jet flow of 18,000 lfm because, in the tooth drying application of Gilbertson, the force of the air stream would cause patient discomfort (Brief, p. 5). But the question is not whether one of ordinary skill in the art would operate the dryer at 18,000 lfm, it is whether one of ordinary skill in the art would have combined the nozzle of Gilbertson with the hair dryer of Tomaro and whether that combination suggests a dryer of the claimed structure. The Examiner has established a motivation based on the objective evidence within the references. Moreover, the Examiner has provided a reasonable basis to believe that a hair dryer with a 19,000 rpm motor is capable of operating to produce a 18,000 lfm airflow: 19,000 rpm is much greater than the 15,000 rpm Appellants state should be used to generate the required airflow. I also agree with the Examiner that Appellants' argument that 18,000 lfm airflow would cause patient discomfort in dental applications lacks factual support and that Gilbertson is not as limited in its teachings as advanced by Appellants (Answer, p. 9, last ¶ and p. 10, first ¶).

The prior art as a whole would have suggested to one of ordinary skill in the art a hair dryer including a blower, motor, heater, and outlet, wherein the hair dryer is capable of generating an air flow of 18,000 lfm. In fact, in my view,



because the motor rotation rate is a substantial factor in obtaining the airflow rate and Tomaro describes a dryer with a rotation rate well above that required by claim 36, claim 36 is anticipated by Tomaro. See In re Ludtke, 441 F.2d 660, 663-64, 169 USPQ 563, 566-67 (CCPA 1971). While the Examiner could have based the rejection on anticipation rather than obviousness, there was no reversible error as the Examiner established that all the structural requirements were present in the prior art and there was motivation to make the combination. See Sastry, 285 F.3d at 1381-82, 62 USPQ2d at 1439. Moreover, lack of novelty is the ultimate or epitome of obviousness. In re Fracalossi, 681 F.2d 792, 794, 215 USPQ 569, 571 (CCPA 1982).

With regard to claims 37 and 38, the nozzle 28 of Gilbertson is suggestive of the outlet structure required by the claims. Note that Nozzle 28 is sized to direct the air toward a small area to be dried (Gilbertson, col. 1, ll. 39-40). For the above reasons, I agree with the majority that a prima facie case of obviousness was established with respect to the subject matter of the rejected claims.

"Once a prima facie case of obviousness has been established, the burden shifts to the applicant to come forward with evidence of nonobviousness to overcome the prima facie case." In re Huang, 100 F.3d 135, 139, 40 USPQ2d 1685, 1689

(Fed. Cir. 1996). As indicia of obviousness or nonobviousness, such secondary considerations as commercial success, long felt but unresolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented and, therefore, may be relevant to the question of obviousness or nonobviousness.

Graham v. John Deere, 383 U.S. 1, 17-18 (1966). Evidence of secondary considerations is but a part of the "totality of the evidence" that is used to reach the ultimate conclusion of obviousness. Richardson-Vicks Inc. v. Upjohn Co., 122 F.3d 1476, 1483, 44 USPQ2d 1181, 1187 (Fed. Cir. 1997). The usefulness of this type of evidence lies in the fact that it "serves as a guard against slipping into hindsight" during the determination of obviousness, Graham, 383 U.S. at 17-18, in that it may demonstrate that the invention, while it appears to be obvious upon looking back in time with hindsight, really was not. Stratoflex Inc. v. Aeroquip Corp., 713 F.2d 1530, 1538-39, 218 USPQ 871, 879 (Fed. Cir. 1983). To properly consider secondary considerations, we must consider all of the evidence under the Graham factors together. Id.

In weighing secondary considerations along with the other evidence, the secondary considerations must be carefully appraised as to evidentiary value. EWP Corp. v. Reliance

Universal, Inc., 755 F.2d 898, 908, 225 USPQ 20, 26 (Fed. Cir. 1985). In some cases, evidence of secondary considerations is highly probative on the question of obviousness. Richardson-Vicks, 122 F.3d at 1483, 44 USPQ2d at 1187. However, objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support. In re Tiffin, 448 F.2d 791, 792, 171 USPQ 294, 294 (CCPA 1971).

Appellants rely on the Gagnon Declaration in an attempt to show evidence of a long-felt need. But the evidence is not commensurate in scope with the claims. Appellants' evidence of a long-felt need is directed to hand dryers; the claims rejected by the Examiner encompass hair dryers. The Examiner has established a prima facie case based on prior art hair dryers. The evidence misses the mark in that it does not tend to show that the rejection is based on any improper hindsight analysis.

Additionally, establishing a long-felt need requires a showing that there was a problem recognized by others in the art that persisted for a long period of time and for which there was no solution. In re Gershon, 372 F.2d 535, 538, 152 USPQ 602, 605 (CCPA 1967). Appellants present no objective evidence that others recognized the problem or were attempting to find a solution. The articles submitted by Appellants do not indicate that others were trying to increase dryer speed, the articles

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only discuss what those at Excel Dryer Inc., the assignee, and at Invent Resources Inc, the company Excel hired, recognized and did. Such a showing does not suffice as evidence of a long felt, but unsolved need. Id.

For the above reasons, I concur in the result reached by my colleagues.



CATHERINE TIMM  
Administrative Patent Judge

) BOARD OF PATENT  
) APPEALS AND  
) INTERFERENCES

Administrative Patent Judge Pak, concurring

I concur fully with the reasoning and analyses provided in the majority opinion. However, I also write separately to express my doubts in the minority's concurring opinion. My opinion follows.

It is well established that "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). The minority cannot ignore a functional limitation simply because it is used to define an apparatus<sup>3</sup>. In re Swinehart, 439 F.2d 210, 212, 169 USPQ 226, 228 (CCPA 1971) (Features of an apparatus can be recited structurally and/or functionally.). When the claimed apparatus is defined by a functional limitation, the minority can shift the burden to the appellants only if she

has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an

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<sup>3</sup> The minority appears to state in her concurring opinion that Danly, for example, does not give any patentable weight to its functional limitation. Danly, however, held that the functional limitation in its apparatus claim imparts patentability. As to Hewlett-Packard, central to the court's holding is that there was a structural difference between the patented and the prior art devices. It does not support the notion that functional limitations can be ignored.

**inherent** characteristic of the prior art<sup>4</sup>...(emphasis ours)

Once the minority carries her burden, the burden is shifted to the appellants to prove that the prior art device does not in fact possess the characteristic relied on. Id.

Here, one of the issues raised in this application is whether the functional aspect of the limitation "an air outlet for outputting said air jet, where said air jet flow is no less than 18,000 linear feet per minute" recited in claim 36 imparts patentability to the claimed subject matter. As is apparent from the examiner's findings at pages 5 and 6 of the Answer, one of ordinary skill in the art understands and recognizes that the velocity of an air flow at the air outlet (the claimed functional limitation) is affected by a number of structural variables (e.g., the air outlet dimension) other than a motor speed. In other words, the claimed functional limitation limits certain structures of the claimed dryer as indicated by the very evidence (Nosenchuck) relied upon by the examiner, which states in relevant part that<sup>5</sup>:

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<sup>4</sup> In re Schreiber, 128 F.3d 1473, 1478, 44 USPQ2d 1429, 1432 (Fed. Cir. 1997), citing Swinehart, 439 F.2d at 213, 169 USPQ at 228.

<sup>5</sup> See column 7, lines 45-54 and column 8, lines 35-52.

The mathematical technique for providing the desired flow characteristics of a hair dryer with the configuration shown are well known to those skilled in the art. The shape of the housing 20 and outer duct 24, the axial length of the annular duct 68 between them and the variation in area of that annular duct in the axial direction, the number of stator and rotor stages, and the shapes and number of blades in each, are capable of being chosen by those skilled in the art using known principles of aerodynamics and fluid mechanics...

The air flow envelope of the ducts is also chosen according to known engineering design principles. The exit velocity of the air flow is an important parameter in that regard. Those skilled in the art will recognize that there are certain practical limits that consumers place on exit velocity magnitudes, as well as there being engineering reasons to have an exit velocity of a certain minimum value.

However, once the total mass flow through the hair dryer is determined, the required dimensions of the ducts can be determined knowing the desired exit velocity. In the embodiment depicted herein, the main housing 30 has a cylindrical inlet portion that extends to the downstream end of the first fan stage 100. Then, the flow envelope is a cubic function, that is,  $d=f(x^{1/3})$ , where  $d$  is the diameter of the main housing and  $x$  is the axial distance along the housing. The outer duct 24 is also configured as a cubic function of the axial distance along the duct. This profile is chosen empirically to inhibit flow separation from the internal duct walls.

The minority asserts<sup>6</sup> that:

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<sup>6</sup> Previously, the minority took the position that the functional aspect of the limitation "an air outlet for outputting said air jet, where said air jet flow is no less than 18,000 linear feet per minute" limits only the type of a motor employed in an air dryer device. Although the minority's opinion does not clear state whether or not she continues to hold this position, it appears that she no longer espouses this position since such a statement has been redacted from her opinion.

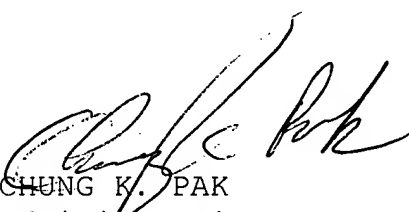
The prior art as a whole would have suggested to one of ordinary skill in the art, a hair dryer including a blower, motor, heater, and outlet wherein the motor is capable of generating an air flow of 18,000 lfm. In fact, in my view, because the motor rotation rate is a substantial factor in obtaining the airflow rate and Tomaro describes a dryer with a rotation rate well above that required by claim 36, claim 36 is anticipated by Tomaro. See In re Ludtke, 441 F.2d 660, 663-64, 169 USPQ 563, 566-67 (CCPA 1971). While the Examiner could have based the rejection on anticipation rather than obviousness, there was no reversible error as the Examiner established that all the structural requirements were present in the prior art and there was motivation to make the combination. See Sastry, 285 F.3d at 1381-82, 62 USPQ2d at 1439. Moreover, lack of novelty is the ultimate or epitome of obviousness. In re Fracalossi, 681 F.2d 792, 794, 215 USPQ 569, 571 (CCPA 1982).

The minority's seemingly contradicting assertions are unsupported by any of her factual findings. The minority, for instance, has not identified any particular teaching, suggestion or motivation to modify or adjust all of the appropriate structures, e.g., the size of the outlet, the blower and the motor, of a dryer so that it is capable of generating the claimed air flow as has been done in the majority opinion. In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) (the evidence of a teaching, suggestion, or motivation to modify must be "clear and particular"). Nor has the minority identified sufficient evidence to support anticipation based on inherency. In re Oelrich, 666 F.2d 578, 581, 212 USPQ 323, 326



(CCPA 1981) (inherency requires that the characteristics not described in the applied prior art references must be necessarily present, not probably or possibly present). There is no finding on the part of the minority regarding the structures, e.g., the size of the outlet, duct, etc., of a dryer taught by Tomaro. The minority's positions are untenable as they contradict the very evidence, Nosenchuck, relied upon by the examiner.

In view of the foregoing, I agree fully with the analyses set forth in the majority opinion, but disagree with the analyses set forth in the minority's concurring opinion.



CHUNG K. PAK  
Administrative Patent Judge

) BOARD OF PATENT  
) APPEALS AND  
) INTERFERENCES

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